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# The changing dynamics of rural territories and fire risk in the inner mountain areas of Spain

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## Abstract:

Fire is a component of social-ecological systems, and also one of the main disturbance factors involved in the evolution of rural landscapes in Mediterranean-climate type regions. Actually, both fire and landscape are natural and cultural realities with a historical background and an interactive evolution. The aim of this contribution is to assess the influence of the physical-environmental, socio-economic and political factors on fire regimes through the last two centuries from a temporal and spatial multi-scale approach.

We have reconstructed the fire history since the 16th century in the inner mountain areas of the Iberian Central Mountain Range from geohistorical and statistical sources. Data show an abrupt change of fire regime in the late 19<sup>th</sup> century due to the prohibition or abandoning of traditional fire use practices in the context of policy and/or socioeconomic changes. Then, a second pyro-transition to catastrophic large wildfires has been identified in the mid-20th century due to socioeconomic changes linked to the energy transition to fossil fuels, urban development and new lifestyles.

We have also analyzed the historical interactions between fire regime evolution and rural landscape dynamics in a set of local case studies representative of biogeographical and socioeconomic diversity of Iberian inner mountain areas. As a conclusion, we have proved that the relationship between the explanatory territorial variables and the response variables of fire occurrence and fire types changes over time according with the socio-spatial dynamics at the local scale.

**Keywords:** Iberian Central Mountain System, historical fires, landscape, land use, Pyrogeography

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